

# COASTAL CONSERVANCY

Staff Recommendation

June 29, 2006

## **CORTE MADERA CREEK FLOOD PROTECTION AND ENVIRONMENTAL ENHANCEMENT PROJECT**

File No. 06-044

Project Manager: Ann Buell/Carol Arnold

**RECOMMENDED ACTION:** Authorization to disburse up to \$100,000 to the County of Marin to conduct hydraulic and fish passage studies and analysis as part of the County's flood protection and environmental enhancement plan for Corte Madera Creek in Marin County.

**LOCATION:** Ross Valley, including the towns of Fairfax, San Anselmo, Ross, Larkspur, and Corte Madera, and the unincorporated communities of Kentfield and Greenbrae, Marin County (Exhibit 1).

**PROGRAM CATEGORY:** San Francisco Bay Area Conservancy

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### **EXHIBITS**

Exhibit 1: Project Location and Site Map

Exhibit 2: Photographs of Flooding in San Anselmo

Exhibit 3: Barriers to Fish Passage

Exhibit 4: Letters of Support

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### **RESOLUTION AND FINDINGS:**

Staff recommends that the State Coastal Conservancy adopt the following resolution pursuant to Sections 31160 through 31165 of the Public Resources Code:

"The State Coastal Conservancy hereby authorizes disbursement of an amount not to exceed one hundred thousand dollars (\$100,000) to the County of Marin to conduct hydraulic and fish passage studies and analysis as part of the County's flood protection and environmental enhancement plan for Corte Madera Creek, Marin County. No Conservancy funds shall be disbursed until the Executive Officer has reviewed and approved in writing:

1. All contractors to be hired.
2. A final work program for the project, included a detailed schedule and budget."

Staff further recommends that the Conservancy adopt the following findings:

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“Based on the accompanying staff report and attached exhibits, the State Coastal Conservancy hereby finds that:

1. The proposed project is consistent with the purposes and objectives of the San Francisco Bay Area Conservancy Program, Chapter 4.5 of Division 21 of the Public Resources Code, §§ 31160-31165.
  2. The proposed project is consistent with the Project Selection Criteria and Guidelines adopted by the Conservancy on January 24, 2001.”
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### **PROJECT SUMMARY:**

This project is designed to provide the hydraulic and fish passage studies and analysis needed by the County of Marin to complete the County’s flood protection and environmental enhancement plan (Plan) for the Corte Madera Creek watershed in Ross Valley, Marin County. The objective of the Plan is to reduce flood threats while addressing long-standing concerns about diminishing salmonid populations and degraded riparian habitat. The Plan will be completed by December, 2006, after which the County will proceed with efforts to establish a local assessment district to help fund implementation. The County will also investigate the potential for federal participation in flood management and fish barrier modification for portions of Corte Madera Creek, and will seek future funding for Plan implementation from other interested agencies and organizations, including the Coastal Conservancy.

The Corte Madera Creek drainage originates in the foothills of Mt. Tamalpais and flows through fairly steep, undeveloped land before leveling out in the more urbanized areas of Ross Valley. The creek joins San Francisco Bay in the town of Corte Madera. This watershed encompasses all or parts of the towns of Fairfax, San Anselmo, Ross, Larkspur, and Corte Madera, and the unincorporated communities of Kentfield and Greenbrae (Exhibit 1, page 2). The creek is prone to flooding at many different locations along its length, presenting serious risks to nearby businesses and homes. On New Year’s Day, 2006, for example, heavy rains caused the creek to overflow its banks with almost four feet of water and debris, resulting in an estimated 70 million dollars in property losses in San Anselmo and nearby communities (Exhibit 2). In response to the urgency created by this flood, the County of Marin authorized the Public Works Department to develop an environmentally sound flood control program to respond to the concerns of business owners and residents in Ross Valley.

The Corte Madera Creek watershed is one of the few drainages in San Francisco Bay still supporting a viable population of California steelhead trout (*Oncorhynchus mykiss*). Within the last few years, several pair of Chinook salmon (*Oncorhynchus tshawytscha*) were also found in the creek, although these fish may have been strays from the Sacramento River. Resource agencies have determined that the creek historically contained a significant run of Coho salmon (*Oncorhynchus kisutch*) and would be a good candidate for reintroduction of this species. Four bridges, two culverts, and an antiquated fish ladder represent the primary constrictions to the high-water flows that cause extensive overbank flooding, and are also among the worst barriers to fish passage (Exhibit 3).

A primary goal of the Plan will be the development of non-structural approaches to flood management, providing adequate protection for property owners while improving fish passage and water quality in the watershed. The planning process will include the completion of

hydraulic and fish passage studies and analysis; the development of a hydraulic model of relevant portions of the creek, identifying key flow constraints; preparation of floodplain maps; and identification of conceptual solutions to resolve flood issues and enhance in-stream and riparian habitat. The process will also include extensive public participation to assure the support of residents and business owners within Ross Valley, and will involve close coordination between the County and local jurisdictions.

A comprehensive and integrated approach to flood management will be emphasized, including environmentally sensitive annual creek maintenance of the main channel and tributaries. Rebuilding or removing the constrictive and habitat-degrading structures mentioned above will be evaluated in the Plan. Previous sediment transport and fish passage studies, and work performed by the U.S. Army Corps of Engineers on Corte Madera Creek, will be incorporated into the analysis to inform and supplement new work. Important goals of the project include improved fish passage, protection and restoration of riparian vegetation, and incorporation of public access amenities. The latter could consist of redesign and reconstruction of existing sidewalks and paved trails where constricting structures inhibit the ability of the creek to carry flood waters. Creek and fishway interpretive signage and other park amenities could be funded by flood control projects as an integral part of an overall flood management plan.

In the past, attempts to address Ross Valley flood concerns in a comprehensive manner stalled or ceased entirely due to public reaction to the environmental and aesthetic qualities of planned solutions. The Conservancy's participation in the planning process will assure adequate hydraulic modeling and fish passage barrier analysis, maximizing the inclusion of habitat and fish recovery goals in the overall program, and encouraging public support of the Plan. The County of Marin Public Works Department will assume the lead role and will build upon extensive past experience resolving flood issues in Marin County.

**Site Description:** The 28-square-mile Corte Madera Creek watershed is located in the eastern urbanized corridor of Marin County, California. It extends from the foothills of Mt. Tamalpais in the coast range, down through Ross Valley, and into a tidal salt marsh at Kentfield. It terminates in San Francisco Bay near the town of Corte Madera. At least 29 named tributaries feed Corte Madera Creek, with an aggregate length of approximately 44 miles (Exhibit 1).

The lower ridges and valley of the basin are highly developed residential and commercial areas. Together, the valley's communities of Fairfax, San Anselmo, Ross, Kentfield, Greenbrae, Larkspur and Corte Madera have a population of approximately 55,000, mostly distributed on the valley floor, and thinning out as the elevations increase in the largely publicly-owned ridge land.

The natural communities of the watershed reflect the variety of local soil types, drainage patterns, elevations, slope, and orientations to sun and wind. Northern coastal scrub, chaparral, grasslands, coastal salt marsh, freshwater marsh, vernal pools, coastal riparian forest, valley oak woodland and oak savannah, coast live oak, and mixed evergreen forest are all found within the Corte Madera Creek watershed.

Mule deer, raccoon, opossum, skunks, numerous birds, and a variety of reptiles and amphibians comprise the most common wildlife species in the watershed. Mountain lions, coyotes and river otters are occasional visitors. The federally endangered California clapper rail and salt marsh

harvest mouse occur in the lower wetlands, and the threatened northern spotted owl has been found elsewhere in the watershed.

Among the many consequences of urbanization that diminished salmonid populations was the construction of the concrete channel by the U.S. Army Corps of Engineers (COE) in Ross and Kentfield in 1971. Immediately after the channel's completion, steelhead trout was still the dominant species in the Ross area. By the mid-1970s, surveys revealed that steelhead had become a minor species. Nevertheless, Corte Madera Creek is one of the few drainages in San Francisco Bay with a viable steelhead population.

Jurisdictions with land use and planning authority within the watershed include the State of California, Marin County, and the towns of Corte Madera, Fairfax, Larkspur, Ross, and San Anselmo. Most of the channel-constricting structures on Corte Madera and tributary creeks have pedestrian pathways integral to or flanking the banks of the Creek.

**Project History:** The once-rural Ross Valley experienced rapid growth in the post-World War II housing boom, resulting in the urbanization of the lower reaches of the watershed and the dedication of the upper reaches to recreation and domestic water supply. Construction and landscaping near the creek and tributaries was often followed by the installation of retaining walls and other hard structures intended to protect or enlarge developed areas. Some of these alterations resulted in severely constricted flows, while adjacent areas were increasingly covered by impervious surface, intensifying peak flows and changing channel characteristics. These changes increased both maximum discharge associated with floods and the frequency of flooding.

Between 1914 and 1969, communities within the Corte Madera Creek basin suffered major flood damage at least nine times. In the late 1960s, County Flood Control Zone Nine was created and the COE began construction on a flood control project originally intended to extend 6.5 miles through Larkspur, Kentfield, Ross, San Anselmo and Fairfax. Construction at the downstream end created a trapezoidal earthen channel and, further upstream, a rectangular concrete channel part way through Ross. Due to community opposition over environmental impacts, extensions further upstream were halted in 1972 with only a portion of the project completed. In 1982, up to five feet of water caused considerable damage in San Anselmo, Ross, Kentfield and Larkspur, and the third largest flood of record occurred the following year. On New Year's Day 2006, flooding caused over \$70 million in damage when the creek overtopped the banks and destroyed property in San Anselmo and nearby communities.

In response to the floods of early 2006, the County of Marin authorized the Public Works Department to develop a flood management program to address flood and environmental issues in Corte Madera Creek. The County held public meetings, developed a preliminary scope of work and prepared a financing strategy. The first step in this program is the development of a flood protection and environmental enhancement plan, the subject of this authorization.

**PROJECT FINANCING:**

Coastal Conservancy	\$100,000
County of Marin	241,000
Cities of Larkspur, Ross and San Anselmo	100,000
In-Kind:	
County of Marin	\$150,000
Friends of Corte Madera Creek	5,500
<b>Total Project Cost</b>	<b>\$596,500</b>

The Conservancy's contribution of \$100,000 is expected to come from its Fiscal Year 2005/06 appropriation from the "California Clean Water, Clean Air, Safe Neighborhood Parks and Coastal Protection Act of 2002" (Proposition 40) for the San Francisco Bay Area Conservancy Program. This funding source may be used for the acquisition, development and restoration of land and water resources in accordance with the provisions of the Conservancy's enabling legislation, Division 21 of the Public Resources Code. The proposed project will result in the enhancement of Corte Madera Creek for fish and wildlife species. In addition, as discussed below, the project is consistent with Chapter 4.5 of Division 21. Proposition 40 also requires the Conservancy to give priority to grant projects with matching funds. The County, local jurisdictions and a nonprofit organization will fund over 80% of the project costs.

**CONSISTENCY WITH CONSERVANCY'S ENABLING LEGISLATION:**

The project is undertaken pursuant to Chapter 4.5 of the Conservancy's enabling legislation, Public Resources Code §§ 31160-31165, to address resource and recreational goals in the San Francisco Bay Area; and § 31111.

Under § 31162(b), the Conservancy may provide grant funding for projects that protect, restore, and enhance natural habitats and connecting corridors, watersheds, scenic areas and other open-space resources that are of regional significance. The project is intended to result in environmentally sound flood management projects that will enhance habitat for the federally listed California steelhead trout, and potentially, Chinook and Coho salmon as well.

Under § 31163(c), the Conservancy is to give priority to projects that support adopted local or regional plans, are multi-jurisdictional or serve a regional constituency, can be implemented in a timely way, and include matching funds. The proposed Plan will be consistent with recommendations from the *Baylands Ecosystem Habitat Goals Report* (1999), Segment I – South Marin: "Enhance riparian and instream habitats on Corte Madera Creek." It is also consistent with the California Department of Fish & Game's *Recovery Strategy for California Coho Salmon* (2004), which cites NOAA Fisheries as having identified Corte Madera Creek as critical habitat for coho salmon (p. 6.45); and with *Historical Status of Coho Salmon in Streams of the Urbanized San Francisco Estuary, California* (2005), which is part of an Endangered Species Act listing petition for California prepared by the Department of Fish and Game. The Flood Protection and Environmental Enhancement Plan will be developed with the support of the County of Marin and local jurisdictions, will support projects that benefit business owners and residents of the entire Ross Valley area, and will be completed by December 2006. Over 75% of

the funding for the Plan stems from sources other than the Conservancy (see “Project Financing” above).

The Conservancy is authorized under § 31111 of the Public Resources Code to fund and undertake plans and feasibility studies and award grants to public agencies for these purposes.

**CONSISTENCY WITH CONSERVANCY'S  
STRATEGIC PLAN GOAL(S) & OBJECTIVE(S):**

Consistent with **Goal 10, Objective A**, the proposed project will result in a plan to enhance riparian habitat and fish migration within Corte Madera Creek in the Ross Valley area as part of a flood management project.

Consistent with **Goal 10, Objective B**, the proposed project will result in a plan to restore San Francisco Bay wetlands, uplands, riparian habitat, and other regionally significant resources. Corte Madera Creek drains into San Francisco Bay and supports significant populations of California steelhead and other aquatic and riparian species. Flood management measures developed in the Plan will incorporate projects to preserve and enhance both in-stream and adjacent riparian habitats with a particular emphasis on improving salmonid migration corridors.

**CONSISTENCY WITH CONSERVANCY'S  
PROJECT SELECTION CRITERIA & GUIDELINES:**

The proposed project is consistent with the Conservancy's Project Selection Criteria and Guidelines adopted January 24, 2001, in the following respects:

1. **Promotion of the Conservancy's statutory programs and purposes:** See the “Consistency with Conservancy's Enabling Legislation” section above.
2. **Consistency with purposes of the funding source:** See the “Project Financing” section above.
3. **Support of the public:** The project is supported by State Senator Carol Migden and Assemblyman Joe Nation, Congresswoman Lynn Woolsey, and local communities throughout the Ross Valley area, as well as resource agencies and organizations including the Corps of Engineers, Department of Fish & Game, Friends of Corte Madera Creek, the North Bay Watershed Association, and the Coalition to Restore Corte Madera Creek (Exhibit 4).
4. **Location:** Corte Madera Creek drains southeast from the eastern foothills of Mt. Tamalpais through Ross Valley to the communities of Fairfax, San Anselmo, Ross, Kentfield, Greenbrae, Larkspur and Corte Madera before entering the Bay approximately nine miles north of San Francisco.
5. **Need:** The participation of the Conservancy is needed to ensure that environmentally sound practices and enhancement measures will be incorporated into the Plan and that the plan will be based on adequate analysis of the hydrology of the creek and watershed. Previous attempts to resolve flood control problems in this area have failed due to concern over environmental issues.

6. **Greater-than-local interest:** This project will benefit residents and business owners throughout the communities of Ross Valley, as well as fish and wildlife resources within the creek and Bay.

### **Additional Criteria**

7. **Urgency:** The catastrophic January, 2006 flood and its associated loss of public and private property provided the catalyst to develop an environmentally sound flood protection strategy to reduce or eliminate this threat in the future. Local jurisdictions, residents and property owners are cooperating in this effort, creating an opportunity that will be lost if the project is delayed.
8. **Resolution of more than one issue:** This project would meet the need for both flood protection and environmental enhancement in Corte Madera Creek, and will incorporate public access amenities into the Plan.
9. **Leverage:** See the “Project Financing” section above.
10. **Conflict resolution:** The project will work to resolve potential conflicts between government jurisdictions, local residents and property owners concerned about flood damage.
11. **Innovation:** The Plan will incorporate innovative, non-structural approaches to flood protection and management, building upon recent efforts in other communities to provide alternatives to traditional flood control practices.
12. **Readiness:** In response to concerns regarding the January, 2006 event, the County of Marin has authorized the development of a flood management program to address Corte Madera Creek flood issues. The public is eager for the project to move ahead and the County and other local jurisdictions are responding in a timely manner.
13. **Realization of prior Conservancy goals:** The Conservancy has been at the forefront of environmentally sound flood management planning, including involvement in the Napa River and the Ventura River. This project is similar in nature to these prior Conservancy involvements.
13. **Cooperation:** In the past, one of the issues preventing a fully developed solution to flooding on Corte Madera Creek was a lack of cooperation between local jurisdictions. Presently, the communities of Ross Valley have indicated their support for the County’s proposed flood management program, overcoming this historic resistance.

**COMPLIANCE WITH CEQA:** The project is statutorily exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to 14 Cal. Code of Regulations § 15262, because it involves only feasibility or planning studies for possible future actions, which the Conservancy has not yet approved, adopted, or agreed to fund. As required by § 15262, the Corte Madera Creek Flood Management and Environmental Enhancement Plan will include consideration of environmental factors. Upon Conservancy approval of the project, staff will file a Notice of Exemption.